NCDENR

North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director | Division of Waste Management | Michael F. Easley, Governor
William G. Ross Jr., Secretary

May 16, 2005

Ms. Jeryl Covington, P.E.
City of Greensboro
P.O. Box 3136
Greensboro, North Carolina 27402-3136

Dear Ms. Covington:

Enclosed is the City of Greensboro's permit number 41-03 to operate a Large, Type 1 Solid Waste Compost Facility at The White Street Landfill in Guilford County. Please carefully review the permit conditions.

Mr. Hugh Jernigan, Waste Management Specialist with the Solid Waste Section, will be responsible for facility inspections. Mr. Jernigan can be contacted at 336-771-4600.

If you have questions, please feel free to contact me at 919-508-8508.

Sincerely,

Ted Lyon

Ted Lyon, Supervisor
Composting & Land Application Branch

cc: Hugh Jernigan, Waste Management Specialist, Winston Salem Regional Office
Central Files – Solid Waste Section

h:cla/compost/permits/41-guil/SWC-41-03_05-05cl

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-508-8400 \ FAX: 919-733-4810 \ Internet http://wastenotnc.org

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
1646 Mail Service Center RALEIGH, N.C. 27699

City of Greensboro

is hereby issued a permit modification for the expansion of the

LARGE, TYPE 1 SOLID WASTE COMPOST FACILITY

at

The White Street Landfill
Permit Number 41-03

in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.

James C Coffey 05/06/05
James C. Coffey, Chief Date
Solid Waste Section

Permit Conditions

1. This permit expands the area of the compost facility to include the section referred to in the application as Plat 3. This section of the facility shall not be put into use until it has been inspected and found to be in compliance with the permit application and the site plan. This includes re-grading the area after removal of the anaerobic digsters.
2. Operation and maintenance of this compost facility shall be in accordance with the Solid Waste Compost Rules (15A NCAC 13B, Section .1400), the permit application and the Operation and Maintenance Manual, dated 24 November 2003, submitted with the permit application. Failure to comply may result in compliance actions or permit revocation.
3. This facility shall be operated in such a manner that erosion and runoff from the site shall be controlled. Any leachate generated at the facility shall be managed in such a manner that it will not be allowed to adversely impact ground or surface waters. Groundwater monitoring wells may be required if there is indication of the potential for groundwater contamination.
4. A storm water permit for the facility shall be maintained as long as the facility is in operation.
5. Only materials specifically listed in the permit application may be managed at this facility without adequate testing and prior approval of the Division of Waste Management.
6. Wastes with low carbon-nitrogen ratios, such as grass clippings, shall be incorporated into the windrows prior to the waste starting to compost (heat), create odors or attract vectors.
7. Temperatures of compost windrows shall be monitored at a frequency adequate to assure that the temperature requirements of Rule .1406(10) are met.
8. Facility operation records shall be maintained in accordance with Rule .1408(b).
9. An annual report of facility activities for the fiscal year July 1 to June 30 shall be submitted to the Division of Waste Management, Solid Waste Section, by August 1 of each year, in accordance with the approved application and Rule .1408(c) of the Solid Waste Compost Rules.
10. The facility shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
11. This portion of the permit to operate 41-03 shall expire on May 6, 2010. A properly completed application for permit renewal, consistent with .0201(e) and the compost rules, shall be submitted at least ninety (90) days prior to the permit expiration date in order to assure continued operation.
12. Changes in ownership, or receiving additional types of wastes shall require a permit modification.

City of Greensboro

Environmental Services Department
Solid Waste Management Division
White Street Landfill

GREENSBORO

NORTH CAROLINA PROFESSIONAL SEAL 024857 ENGINEER GREGORY A. THOMASSON

03/23/05

APPLICATION TO OPERATE A

LARGE TYPE 1 COMPOST FACILITY

MARCH 2005

APPROVED
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 5/13/05 BY

P.O. BOX 3136, GREENSBORO, NC 27402-3136

City of Greensboro
North Carolina

March 23, 2005

Mr. Ted Lyon
Branch Head
NCDENR – Division of Waste Management
1646 Mail Service Center
Raleigh, NC 27699-1646

Subject: City of Greensboro Yard Waste Composting Facility Permit Application

Dear Mr. Lyon;

Please find enclosed five copies of the final yard waste composting permit application for Plat 3. In accordance with Solid Waste Permit No. 41-03, the City of Greensboro currently operates a large type 1 compost facility on two plats of land within the White Street Landfill. The enclosed permit application proposes to add a third plat (Plat 3) to our existing compost facility. As you are aware, the third plat is where the anaerobic digesters were located.

We appreciate your assistance in this matter. If you should have any questions or need any additional information, please do not hesitate to contact me at (336) 373-4107.

Sincerely,

Gregory A. Thomasson, P.E.
Technical & Planning Support Manager

Enclosure

P.O. Box 3136 • Greensboro, NC 27402-3136 • www.ci.greensboro.nc.us • (336) 373-2065 • TTY # 333-6930

Table of Contents

Appendix

Section 1.0
Introduction

1.1 Purpose

In accordance with Solid Waste Permit # 41-03, the City of Greensboro currently operates a large type 1 composting facility on two plats of land (Plats 1 & 2) within the White Street Landfill. The purpose of this application is to add a third plat (Plat 3) and to provide the information required under the North Carolina Solid Waste Management Rules 15A NCAC 13B Section .1400 – Solid Waste Compost Facilities. The enclosed information demonstrates that the yard waste composting facility to be operated by the City of Greensboro will comply with all siting, operation, and construction requirements as outlined in Rules .1404 and .1405.

1.2 Background

The City of Greensboro proposes to operate three plats in the compost operation. Plat 1 is a 12.537-acre tract that was originally permitted on September 4, 1992 for the Scott's Composting facility. Plat 2 is a 6.75-acre tract that was permitted for storage in 1994 for the Scott's Composting facility. On December 18, 2003, the City of Greensboro received a permit to operate a large type 1 permit on these two tracts. A type 3 anaerobic digester fermentation facility was permitted on the 9.0-acre tract of Plat 3. The anaerobic digesters have been removed from the plat. The City of Greensboro proposes to utilize this land for Plat 3 of the compost operation.

Exhibit 1 in Appendix A shows the relative location of each plat with regard to the City of Greensboro's waste management operations. Exhibit 2 is an aerial photograph of the site with a scale of one inch equal to 400 feet. The City currently disposes of municipal solid waste in the Phase III unit.

Section 2.0[1]
Site Application

The North Carolina Solid Waste Management Rules require that all compost facilities submit an application for construction and operations in accordance with Section .1400 – Solid Waste Compost Facilities. The site application portion must include local characterization, government approval, compliance with siting standards and a facility report.

As indicated in Section 1.2 – Background, the City of Greensboro submitted a site study for the expansion of the White Street Sanitary Landfill and received a permit in December 1997 to continue municipal solid waste (MSW) disposal operations at the facility. With the exception of topographic and hydro geologic data specific to the yard waste compost areas (Plats 1, 2 and 3), the MSWLF site study addresses all issues relevant to this site application. In addition, a number of the siting and design requirements were addressed under the initial yard waste compost permit application and have not varied since that time. This section briefly discusses compliance with Rule .1405 – Application Requirements for Solid Waste Compost Facility and references the MSWLF Site Study or the initial permit application for relevant background information.

2.1 One-Fourth Mile Study Area

A local characterization study was performed as part of the Site Study for the Phase III Expansion of the White Street Sanitary Landfill. The requirements of the local characterization study (Rule .1618) parallel the requirements of Rule .1405, one-fourth mile study; thus, much of the information presented below was taken from the MSWLF Site Study. Exhibit 1 shows the landfill property boundary; yard waste compost facility boundary, and the surrounding area at a scale of one-inch equals 400 feet.

2.1.1 Property Description

The City of Greensboro owns the White Street Sanitary Landfill and has operated the facility since 1952. The entire property encompasses an area of approximately 890 acres. As constructed, the City of Greensboro's White Street Sanitary Landfill is divided into three phases. Phase I is an 85-acre site that stopped receiving municipal solid waste prior to 1978. The Phase II area consists of approximately 120 acres and has been capped for final closure. A portion of this area is used for the disposal of construction and demolition waste. Currently, MSW is disposed of in the Phase III area which consists of a total of approximately 127 acres with approximately 52 acres constructed with a Subtitle D liner system. The City operates the municipal solid waste landfill, C&D landfill, a scale house, and a maintenance facility on the property.

The existing yard waste compost facility consists of a 12.537-acre area, designated Plat 1 and a 6.75-acre area, designated Plat 2. A proposed 9.0-acre area to be included in the facility permit will be designated as Plat 3. All three of these areas which compromise the yard waste compost facility are located as part of the total 890 acres owned by the City of Greensboro.

2.1.2 Location of Homes, Industry, Utilities, and Roads

The area within 500 feet of the yard waste compost facility boundary is predominately residential with no major industrial or commercial facilities. The homes closest to the facility are located along Rankin Mill Road. The required buffer of 200 feet for Plats 1, 2 and 3 between private residences will be maintained.

2.1.3 Topography and Drainage Patterns

The existing composting pad has been graded at a 1 percent slope from an eastern elevation of approximately 763 feet to a western elevation of approximately 750 feet. The northern portion of the pad is sloped to promote runoff of storm water to the existing retention and sediment pond. The storm water flow from the pond discharges into Buffalo Creek located northwest of the yard waste compost facility.

2.1.4 Land Use and Zoning

All property utilized for composting operations is located within the city limits of Greensboro and is zoned CU-HI – Condition Use-Heavy Industry. Within one-fourth mile of the compost facility boundary, land use consists of AG – Agricultural; CU-HI – Condition Use-Heavy Industry; and RS-30-MH – Residential Single Family Mobile Home District (1.3 units or less per acre).

2.2 Local Government Approval

A letter from the City of Greensboro which states that the proposed use is allowed within the existing zoning is included as Appendix B.

2.3 Siting Standards Compliance

Rule .1405(a)(3) of the North Carolina Solid Waste Management Rules requires a discussion of site compliance with the siting and design standards. The following paragraphs address these issues for Plats 1, 2 and 3 of the composting facility.

2.3.1 Floodplains

A review of the flood insurance rate map (375351 0004C and 0010C) prepared by the Federal Emergency Management Agency indicates a 100-year floodplain does exist on the City of Greensboro's White Street Sanitary Landfill property but not in the area of Plats 1, 2 and 3. The floodplain area is in excess of 1000 feet from Plats 1 and 3 and approximately 200 feet from the Plat 2 area. Thus, the proposed operation will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human life, wildlife, or land or water resources.

2.3.2 Site Buffers

Rule .1404(a) requires all Type 1 compost facilities to maintain the following minimum buffers:

- 50 feet between the boundary and property line. The minimum buffer between Plats 1, 2 and 3 and a property line is 369 feet.
- 200 feet between the facility boundary and private dwellings. The minimum buffer between Plats 1, 2 and 3 and a private dwelling is 502 feet.
- 100 feet between the facility boundary and wells. The minimum buffer between Plats 1, 2 and 3 and a private well is approximately 502 feet.
- 50 feet between streams and the facility boundary. The minimum buffer between Plats 1, 2 and 3 and landfill drainage areas is 200 feet. The minimum buffer between Plats 1, 2 and 3 and North Buffalo Creek is approximately 615 feet.
- 25-foot access road is provided between compost areas and swales or berms to allow for adequate access of fire fighting equipment.

As shown on Exhibits 3 and 4, all buffer requirements for each area have been met or exceeded for the proposed composting areas.

2.3.3. Surface Water Control

As shown on the construction plans provided in Appendix A, the composting areas are surrounded by berms to prevent any storm water runoff from exiting the site. Storm water is placed back into the composting windrows or directed into retention or sediment ponds. The water collected in the ponds is used to maintain moisture control in the composting windrows. A storm water permit has been issued for the landfill.

2.3.4 Groundwater Monitoring

An extensive groundwater program has been established at the site by the City of Greensboro to monitor the MSW disposal areas. The location of the composting areas up gradient of the closed MSW unit allows for any groundwater contamination to be detected prior to its leaving the landfill property. Exhibit 5 shows all monitoring wells in Phase I and II which are down gradient from the composting areas.

2.3.5 Air Pollution Control

Odor will be kept to a minimum by providing adequate aeration for the aerobic decomposition. Composting windrows containing only leaves and brush are turned at least once per month to maintain the composting process and to minimize odors. Windrows that contain materials that require more frequent aeration are turned more frequently. Nitrogen containing materials such as grass clippings will be promptly incorporated into windrows.

2.4 Facility Report

Rule .1405(a)(4) of the North Carolina Solid Waste Management Rules requires a discussion of the type, quantity, and source of the waste to be composted at the facility.

For facilities that utilize natural soils as a pad, a discussion of the soil properties and depth to seasonal high water table is required.

2.4.1 Service Area, Waste Description, and Quantity

The yard waste facility accepts organic yard and garden waste generated from within Guilford County and from municipalities whose boundaries cross into Guilford County. These materials include leaves, grass clippings, branches, sod, garden waste, and any vegetative waste. Currently, the White Street Landfill receives approximately 30,000 tons of waste per year of yard waste that could be utilized in a composting and mulching operation. A nitrogen amendment could be used to adjust the C:N ratio.

2.4.2 Soil Analysis

As provided in the initial permit application, the existing composting pad is composed of clayey silt material, classified as ML, to a depth of approximately seven feet. Seasonal high water groundwater is located in excess of four feet below the composting surface.

Section 3.0[2]
Site and Operation Plan

3.1 Site Plan

In accordance with Rule .1405(a)(5), this application must include a site plan which indicates the existing and proposed features: surface water control; designated set backs and property lines; utilities and structures; and areas designated for unloading, processing, active composting, curing, and storing of material.

The construction plans for Plats 1, 2 and 3 of the proposed composting facility are provided in Appendix A. Exhibits 3 and 4 have been prepared from these plans to provide a composite site plan of the facility at a scale of one inch equals 100 feet to address the application requirements. The following is a brief narrative describing the plans and discussing the above-mentioned requirements.

3.1.1 Existing Contours

Plats 1 and 3 have been constructed and will be utilized for receiving, processing, and windrow operations. Plat 2 will be used as a storage area for overflow of yard waste and compost material. The stored yard waste material may be windrowed prior to relocating to Plat 1. The site features of Plats 1 and 3 prior to development of the compost facility consisted of a soil borrow area, which provided the City of Greensboro with daily soil cover for operations of the MSW landfill. Prior to the landfill borrow operation, Plats 1 and 3 were part of the ridgeline along Rankin Mill Road which sloped toward the north and west to North Buffalo Creek.

3.1.2 Surface Water Control

Storm water control has been established for Plats 1, 2 and 3 through the use of perimeter berms, drainage ditches and sediment basins. The Plat 1 area was constructed with a center ridge that slopes at 1 percent to the perimeter berms. Surface water collected in the southern half of Plat 1 is drained under the berm in the southwestern corner through a culvert into a sediment basin adjacent to the site. Water discharged from the sediment basin flows over the landfill property through drainage channels and culverts into North Buffalo Creek just upstream of the City's closed Phase I MSW landfill.

Storm water collected in the northern half of Plat 1 and from Plat 3 drain northwest into a sedimentation basin. The discharge from the sedimentation basin flows into a culvert on the northwest edge of the compost operation. The storm water from this area eventually drains to sedimentation basin 1. The discharge from this basin goes into North Buffalo Creek.

3.1.3 Site Development

Plat 1 has been developed for all yard waste processing operations. Existing facilities include paved access roadway, receiving/processing area, maintenance facility, office and windrow composting areas. Plat 3 has been graded according to Exhibit 3 and will also be used as a windrow composting area.

3.2 Facility Operation

In accordance with Rule .1405(a)(6), a description of the facility operation is required which includes the responsible operating party, the plan of operations, procedures, controls, and the final use of the finished compost. The following is a brief narrative discussing the above mentioned requirements.

3.2.1 Responsible Party

The yard trimmings composting facility will be operated by the City of Greensboro. The individual that will be responsible for the operation and maintenance of the facility is Mr. Robert L. Rash, Facility Manager. Mr. Rash served as the Facility Manager for this site as an employee of The Scotts Company from March 1994 to May 1997. Mr. Rash will report directly to Mr. Greg Dingman, Solid Waste Disposal Manager.

3.2.2 Operation Plan

Waste material received at the White Street Sanitary Landfill scale house is weighed and categorized as residential, industrial, commercial, construction/demolition, and yard waste. Scale house operations are performed by the City of Greensboro landfill employees who direct the waste to its designated disposal area. Yard waste, as defined in section 2.4.1, will be directed to the yard waste composting facility.

At the yard waste composting facility, City employees will perform all composting operations including receiving the waste at the receiving and processing area, grinding, mixing, placing yard waste in windrows, turning windrows, monitoring windrows, transfer of the material to curing areas, and loading of the finished compost. A detailed Operations and Maintenance Plan, prepared by the City of Greensboro for the Yard Waste Composting Facility is provided in Appendix C. Exhibit 6 provides a diagram of the operations to be performed on Plats 1 and 3.

3.2.3 Final Use

The finished compost product from the Greensboro facility will be loaded into trucks for transfer of the material. The compost will be marketed and sold to local homeowners, landscapers, garden centers, sod farmers, or mulch supply companies.

Finished product materials which do not meet the required quality standards will be returned to the system where they are mixed with windrows undergoing the composting process. Any compost that needs to be disposed of due to poor quality or change in market conditions and was produced only from yard waste, does not contain supplemental nitrogen, and contains less than 6% foreign matter will be placed in a permitted LCID landfill.

3.3 Facility Design Report

The facility is designed to provide composting of 45,000 tons of materials at any one time. The raw materials are received in the yard waste drop-off area as indicated on Exhibit 6. As the materials are dumped, each load is inspected to assure that only authorized materials are admitted. A process flow diagram is provided as Exhibit 7, and the following briefly describes the steps to be completed to transform the yard waste into a marketable compost material.

- Processing – Once deposited in the drop-off area, all non-compostable contaminants are removed and the waste is segregated by type depending on carbon and nitrogen levels.
- Material Size Reduction and Mixing – The yard waste is mechanically processed into small (less than two inches), relative uniform particles. The various types of yard waste will be mixed going into the grinder to help prepare a uniform product and avoiding large "clumps" of similar types of yard waste. The small, uniform, mixed material will decompose more rapidly and uniformly, generating a higher quality product.
- Placing the Yard Waste in Windrow – After grinding, the yard waste is placed in long, uniform piles called windrows. The windrows will typically be 8 feet high, 20 feet wide at the base and of varying lengths as material is generated and processed. Adequate height and width are important in order to sustain the optimum temperature and moisture levels for rapid decomposition. The

windrows will be placed far enough apart to allow processing equipment easy access to turn the windrows over regularly.

- Turning the Windrows – The windrows will be turned or mixed regularly to rotate the material from the outside of the pile to the inside. This action replaces the oxygen depleted in the center of the pile, helps maintain the temperature in the windrow, and provides a control mechanism for moisture content. More frequent turning speeds the decomposition process and mitigates any potential odors.
- Finishing the Compost – The initial rapid decomposition of the yard waste into the compost will slow as the material stabilizes. With regular turning, the material will be normally stable in three to four months but can be stabilized in four to six weeks. To improve quality and appearance (market ability) of the end product, it will be passed through a screen to remove oversize particles and transferred to curing piles. The curing process allows the materials to be stabilized and blended with material from different seasons. By placing the compost in the curing area in horizontal lifts and removing the material for sale or use in vertical cuts, seasonal difference in composition are minimized, resulting in the most uniform product.
- Material Testing – Testing of the finished compost assures users of the quality and safety of compost.

3.4 Label Description

In accordance with Rule .1405(a)(8), a label will be provided that meets the requirements of Rule .1407(g). The City of Greensboro plans to sell the finished product in bulk. Therefore, an information sheet will be provided to the users in lieu of a label on the finished product. An example information sheet is included as Appendix F.

Since the Greensboro Yard Waste Composting Facility is classified as a type 1 and the finished compost contains minimal pathogenic organisms, is free from offensive odor, and contains no sharp particles, the distribution will be unrestricted.

3.5 Plans and Specifications

As discussed in Section 3.1 – Construction Plan, the proposed yard waste compost facility will be located on Plats 1 and 2, which have not been modified since the initial permits were issued in 1992 and 1994. A minimal amount of grading has occurred on plat 3 to promote drainage. The process and proposed equipment utilized in the compost operation will be similar to the previously permitted equipment. A typical spec for the types of equipment to be used is provided in Appendix D.

3.6 Operations and Maintenance

In accordance with Rule .1405(a)(10), a detailed discussion of the facility operation and maintenance is to be provided in the areas of quality assurance, contingency and operational compliance. These areas have been addressed in detail in the Operations Plan prepared by the City of Greensboro and included in Appendix C. The following provides a summary of these requirements.

3.6.1 Quality Assurance

As detailed in the Operations Plan, all incoming materials are inspected as each load is received to prevent contamination.

3.6.2 Contingency Plan

A contingency plan has been developed as part of the Operations Plan to provide site personnel directions regarding emergency situations. Personnel that are involved in the operation or that inspect the operation are provided training in the following areas:

- Familiarity with the Operations Plan

- Yard Waste Screening and Acceptance (including how to deal with unacceptable material)
- Safety and Standard Operating Procedures
- Fire Identification, Protection, and Emergency Response Procedures
- Federal, State, and Local Environmental Regulations
- Spill Response

Significant down time for the major equipment utilized at the site is generally off-set through the use of rental equipment or contractors. The City of Greensboro operates a maintenance shop on the White Street Landfill premises.

3.6.3 Operational Compliance

The yard waste compost facility will be operated and maintained in accordance with the requirements of Rule .1406. The plans and permit conditions will be followed and a copy of all documents will be maintained on site. As previously described, surface water control measures are in place to prevent any contaminants from leaving the facility site. Access to the site is limited through the existing landfill facility scale and scale house operations with signage provided to direct traffic. The compost facility as part of the City's landfill property is secured through perimeter fencing and gates. The Operations Plan developed by the City of Greensboro and included as Appendix C provides a description of the operations and monitoring parameters used in the production of the finished compost.

Endnotes

[1]The Scotts Company & Subidiaries with assistance from Olver Incorporated, Yard Waste Composting Permit Renewal/Amendment, March 1998

[2]The Scotts Company & Subidiaries with assistance from Olver Incorporated, Yard Waste Composting Permit Renewal/Amendment, March 1998

Appendix A

Exhibits

Appendix B

City of Greensboro Zoning Approval

City of Greensboro
North Carolina

Office of City Attorney

August 11, 2003

North Carolina Department of
Environmental and Natural Resources
Solid Waste Section
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

Dear Sirs or Madams:

This is to certify that the City of Greensboro holds fee simple title to the property known as the White Street Landfill located at 2503 White Street.

If you have any further questions, please contact me.

Sincerely,

Linda A. Miles
City Attorney

LAM/sn

City of Greensboro
North Carolina

October 29, 2003

North Carolina DEHNR
Waste Management Division
401 Oberlin Road, Suite 150
Raleigh, NC 27611-7687

Re: Compost Permit Application - Local Consistency Determination for White Street Landfill

Gentlemen:

The City of Greensboro has received a request from the State of North Carolina concerning a Compost Permit Application. In accordance with North Carolina Waste Management Regulations, the City of Greensboro has been requested to submit a letter indicating that the proposed facility complies with zoning and subdivision regulations.

The property where the White Street Landfill is located 2503 White Street is currently zoned CU-HI (Conditional Use-Heavy Industrial) which permits the proposed use. This property currently complies with all zoning and subdivision regulations. The City of Greensboro Planning and Zoning Department currently does not have any compost control regulations within our zoning ordinance.

If you have any questions concerning this matter, please do not hesitate to contact me.

Sincerely,

Loray Averett

Loray Averett
Zoning Enforcement Officer
(336) 373-2630 (Voice)
(336) 333-6930 (TDD)
email: loray.averett@ci.greensboro.nc.us

cc: Jeri Covington
Environmental Services

Appendix C

Operation & Maintenance Plan

OPERATIONS AND MAINTENANCE PLAN

1.0 GENERAL

1.1 Purpose

The purpose of the City of Greensboro Yard Waste Composting Facility is to convert yard waste into usable organic compost and mulch, thereby conserving disposal space while providing a usable soil amendment.

Accomplishing this goal requires a carefully planned, well-operated facility that produces quality compost and mulch that consumers can confidently use safely and effectively. The three main ways of insuring consumer confidence and material quality are:

- Incoming material inspection and quality control
- Process control to assure proper composting and a consistent product
- Material testing to demonstrate product quality

To assure these three areas are being performed correctly requires careful management and attention to detail. A composting operation must be properly managed and closely monitored in order to be successful. Problems with vectors, odor and incomplete decomposition can occur if the site supervisor and other employees do not have the necessary understanding of the composting process. Through effective management, supervision, and training, the City of Greensboro will be able to operate a Compost Facility with minimal operational shortcomings.

1.2 Hours of Operation

The City of Greensboro Yard Waste Composting Facility will operate from 7:00 AM – 4:45 PM Monday – Friday and from 7:00 AM – 1:00 PM on Saturday.

1.3 Responsibilities

Waste materials received at the White Street Landfill scale house are weighed and categorized as residential, industrial, commercial, construction/demolition, land clearing/inert debris and yard waste. The operation of the scale house is performed by City of Greensboro employees who direct the waste to its designated disposal area. Yard waste, which includes leaves, grass clippings, branches, garden waste and any vegetative waste generated from within Guilford County or from

municipalities whose boundaries cross into Guilford County, is directed to the yard waste composting facility.

At the yard waste composting facility, City employees perform all composting operations including receiving, screening (for suitability), grinding, mixing, windrowing, turning, monitoring, curing, blending, loading and/or packaging of the finished product. The process flow diagram along with the responsibilities of each individual is attached to this O & M Plan. The compost facility will be operated by the City of Greensboro at the following address:

City of Greensboro
White Street Landfill
2503 White Street
Greensboro, NC 27406

Each of the below personnel are located at the above address. The personnel, phone numbers, and responsibilities are outlined below:

Name: **Greg Dingman** Title: **Solid Waste Disposal Manager**	Phone #: (336) 373-7660 Cell #: (336) 430-6172
Responsibilities: Oversees all landfill operations.	
Name: **Robert Rash** Title: **Composting Facility Manager**	Phone #: (336) 373-7659 Cell #: (336) 442-4776
Responsibilities: Manages and oversees compost facility. Will ensure that the facility complies with all aspects of the Operations and Maintenance Plan including compost processing, record keeping, monitoring, facility safety, and environmental regulations. **Will update the O&M Plan on an annual basis.**	
Name: **Chuck Waite** Title: **Operator 1**	Phone #: NA Cell #: NA
Responsibilities: Will be responsible for operating grinder, front wheel loader, and minor maintenance issues.	
Name: **Lewis Walker** Title: **Operator 2**	Phone #: NA Cell #: NA
Responsibilities: Will be responsible for row layouts and operation of the windrow turner. When needed will assist with screening operation.	
Name: **David Graham** Title: **Maintenance Worker 1**	Phone #: NA Cell #: NA
Responsibilities: Will be responsible for overseeing the temporary staff which will sort incoming materials.	
Name: **Varies** Title: **4-6 Temporary Workers**	Phone #: NA Cell #: NA
Responsibilities: Will be responsible for removing contaminants from incoming materials.	

1.4 Yard Waste Accepted

To insure a high quality and consistent compost, only organic yard and garden waste will be accepted at the composting facility. These materials include: pallets, leaves, grass clippings, branches, sod, garden waste, and any vegetative waste.

The compost facility supervisor will be responsible for insuring that only authorized materials are accepted at the site. Material contaminated with MSW, C&D, hazardous waste, asbestos containing waste, medical waste, liquids, rocks, or any other contaminant not compatible with composting will be refused and directed to other areas for proper disposal.

1.5 Facility Records

The City of Greensboro will maintain the following information at the White Street Landfill as part of the permanent operating record and will be available for inspection at any time during normal operating hours:

- Quantity, type and source of waste received at the Compost Facility
- Quantity and type of waste processed into compost
- Daily operating record which shall include temperature data, quantity of material processed
- Analytical results on compost testing
- The quantity and type of compost produced by product classification
- The quantity and type of compost removed for use or disposal, by product classification, and the market or permitted disposal facility.

1.6 Reporting

An annual report for the period of July 1 to June 30 will be prepared and submitted to the Division of Waste Management by August 1. The report will include the following information:

- The facility name, address, and permit number;
- The total quantity in tons and type of waste received at the facility during the year covered by the report, including tons of waste received from local governments of origin;
- The total quantity in tons and type of waste processed into compost during the year covered by the report;
- The total quantity in tons and type of compost produced at the facility by product classification during the year covered by the report;

- The total quantity in tons and type of compost removed for use or disposal from the facility by product classification along with a general description of the market if for use during the year covered by the report;
- Monthly temperature monitoring to support Rule .1406; and
- Results of analytical testing required by regulation.

1.7 Traffic Control

The City of Greensboro's scale house staff will be responsible for having incoming trucks directed to the entrance of the Compost Facility. The Compost Facility Supervisor will be responsible for posting signs, traffic cones and barricades as necessary to direct vehicles to the appropriate location to deposit the yard waste. The entry route will be marked by signs and set up to allow additional vehicles to safely queue when access to the tipping area needs to be controlled or limited. Proper traffic control is important to prevent yard waste from being received in unauthorized areas and to move vehicles through the site safely and efficiently. Signs located at the facility include:

- Directional signs located along the landfill road between the scale house and the compost facility.
- Facility sign at the site entrance indicating the City of Greensboro Compost Facility.
- Informational sign located just inside the entrance, which list the materials accepted, the facility permit number, and hours of operation.
- Informational sign stating that no hazardous waste, asbestos containing waste, or medical waste can be received at the site.
- An exit sign located at the facility exit.

2.0 COMPOSTING OPERATIONS

2.1 General

The City of Greensboro will conduct operations necessary to transform yard waste into marketable compost material. The compost will be produced using conventional windrow composting with yard waste maintained under predominantly aerobic conditions. Composting involves a number of sequential steps, each of which will be described in detail in the following sections. Briefly, these steps include:

- Overflow area – Plat 2 will be used as an overflow area for the composting areas at Plats 1 and 3. Yard waste or compost may be stored either in piles or windrows in the overflow area. The yard waste will be transferred from Plat 2 to Plats 1 or 3 as soon as the City of Greensboro is ready to compost the material or sufficient space is available.

- Preprocessing – Removal of non-compostable contaminants such as plastic bags, cans, bottles, etc. and segregation of different types of yard waste depending on carbon and nitrogen levels (e.g., brush, leaves, grass clippings, conifer needles) as necessary to facilitate the composting process.

- Material Size Reduction and Mixing – The yard waste are mechanically processed into small (less than two inches), relatively uniform particles. The various types of yard waste will be mixed going into the grinder to help prepare a uniform product and avoiding large "clumps" of similar types of yard waste. The small, uniform, mixed material will decompose more rapidly and uniformly, generating a higher quality product.

- Placing the Yard Waste in Windrows – After grinding, the yard waste is placed in long, uniform piles called windrows. The windrows will typically be 8 feet high, 20 feet wide at the base and of varying lengths as material is generated and processed. Adequate height and width are important in order to sustain the optimum temperature and moisture levels for rapid decomposition. The windrows will be placed far enough apart to allow processing equipment easy access between them to turn the windrows over regularly.

- Turning the Windrows – The windrows will be turned or mixed regularly to rotate the material from the outside of the pile to the inside. This action replaces the oxygen depleted in the center of the pile, helps maintain the temperature in the windrow, and provides a control mechanism from moisture content. More frequent turning speeds the decomposition process and mitigates any potential odors.

- Finishing the Compost – The initial rapid decomposition of the yard waste into the compost will slow as the material stabilizes. With regular turning, the material will be normally stable in three to four months, but can be stabilized in four to six weeks. To improve quality and appearance (marketability) of the end product, it may be passed through a screen to remove oversize particles and transferred to curing piles. The curing process allows the material to be stabilized and blended with material from different seasons. By placing the compost in the curing area in horizontal lifts and removing the material for sale or use in vertical cuts,

seasonal difference in composition are minimized, resulting in the most uniform product.

- Material Testing – Testing of the finished compost assures users of the quality and safety of compost.

2.2 Materials Processing and Size Reduction

Material preprocessing and size reduction are important for successful composting. Non-compostable contaminants such as plastic bags, cans bottles, etc., are removed from the raw material and placed in 40 cubic yard containers. These containers are removed from the site when full and disposed of in the sanitary landfill. Bulk material rejects such as metals, plastics, rubber, etc., are placed in a rejects pile and are removed to the sanitary landfill.

The smaller the size of the particles in the composting process, the faster and more easily the material composts. Size reduction increases the relative surface area available for microbial communities to use as a nutrient source. However, the necessary fuel, time, and maintenance of equipment (and, therefore, processing costs) increase with the generation of smaller size particles. The optimum particle size has been identified as two inches and less. The preprocessing and size reduction procedure also includes proper mixing of different types of yard waste to achieve a suitable carbon/nitrogen (C/N) ratio. Since the microorganisms responsible for aerobic decomposition utilize 30 parts carbon (for growth) per one part nitrogen (for protein synthesis), a C/N ratio of 30 is best for composting. Research has found that the optimum C/N ratio is between 25 and 35. If the C/N ratio is above 35, the composting process requires more time to produce a quality compost. Conversely, if the C/N ratio goes below 25, the composting process can generate odors as the excess nitrogen is released as ammonia. Grass clippings typically have a C/N ratio of 20. The C/N ratio for leaves and weeds range from 40 to 90. Brush and woody material have C/N ratios as high as 700. A desirable C/N ratio can be achieved by mixing the various types of plant waste in the grinding and windrow stages.

By segregating the incoming yard waste into categories according to potential nitrogen content as much as possible, and then mixing these materials during grinding and windrowing in a manner that strives towards a C/N ratio between 25 and 35, the most rapid and higher quality compost can be produced.

If large quantities of woody waste are received compared to other waste, excess portions of the wood and brush can be chipped and grounded to

produce fine and course grades of mulch and shredded wood, which may be sold directly as a landscaping mulch or ground cover.

If sufficient quantities of high nitrogen content yard material is not available to delivered yard waste, some compost materials may be mixed with fresh yard trimming to reduce the C/N ratio.

2.3 Windrow Formation and Turning

After grinding and mixing, the yard waste is piled into windrows to begin the composting process. There are three primary functions of turning the windrow: 1) aeration 2) uniform composting and 3) pathogen kill.

The organisms involved in composting need oxygen for their growth and survival. As the oxygen in the center of the windrows is depleted by the metabolic activity of the composting organisms, the piles must be turned to replace the oxygen (aeration). The frequency of turning depends on the type of materials and the moisture content. If aeration is not provided for the compost windrows, anaerobic conditions (no oxygen) can result, producing odor problems (especially during the turning process) and halting the decomposition process (pile failure).

Turning the windrows promotes more uniform composting by ensuring that all portions of the pile are exposed to high temperatures and oxygen. If this is not done regularly, materials on the inside may get so hot that organism growth is inhibited, while in other portions of the pile, low temperatures may not produce conditions for stabilization. The end result would be low quality compost.

It is important in organic material composting to ensure that plant pathogens have been destroyed. If plant pathogens survive the composting process, there is the possibility that plant diseases may be passed to the end user of the compost, potentially infecting any plants on which the compost is used. In general, a significant reduction in the number of pathogens of concern occurs by exposing all elements of the composting material to temperatures greater than 135°F for greater than five hours.

Windrows will be formed on the ground at the composting facility. The actual windrows will be about 20 feet wide and 8 feet high, with about 15 feet between adjacent windrows to allow a windrow turner (or equivalent) to operate. As the composting process proceeds, the volume of each row will decrease. Rows will be combined to maintain the appropriate dimensions of the windrow. Cat bucket loaders (or equivalent) shall be used for many site operations including materials transfer.

Proper height and width of each windrow is important in order to maintain the correct moisture and temperature levels. Maintaining large windrows with low surface-to-volume ratios during the latter stage of composting can conserve heat and aid temperature degradation of the organic material.

The windrow turning process is designed to provide aeration and to result in the material on the outside of the pile forming the innermost layers of the reconstituted pile. **The compost windrows may be turned by either a windrow turner or a bucket loader. If a bucket loader is used, the material will be lifted in the loader bucket and allowed to cascade down to facilitate aeration.**

After initial formation, the windrows will be allowed to process until the temperature reaches 140°F. After this initial period, the windrows shall be turned when the temperature reaches 140°F or when appropriate.

If a large percentage of grass is being composted in a particular batch, additional turning may be necessary to prevent odors during the first couple of weeks of the composting operation. The decision to turn the windrow early is to be made by the composting facility manager.

Approximate composting time will be three to four months and possibly longer when large quantities of woody materials are used. If necessary, composting can be completed in four to six weeks.

A stabilizing of the temperature at a low level will indicate the end of the composting process.

2.4 Compost Monitoring

Composting is the result of the actions of a microbial community, which converts easily degradable organic matter to more stable humidified forms and to inorganic products such as carbon dioxide, water, ammonia, nitrate, and methane giving off heat as a metabolic yard waste product. The physical and chemical environment surrounding the compost microbes is constantly changing, primarily as a result of the accumulation of their own metabolic by-product, including heat. In turn, the conditions of the environment in which the microbes are in contact can greatly affect their ability to grow, to metabolize, and to survive.

The purpose of the compost monitoring program is to ensure that optimum conditions are maintained for microbial growth within the compost. The site operator will regularly monitor the temperature and moisture content of the compost windrows.

2.5 Temperature Monitoring

Temperature monitoring at the facility is conducted using a thermometer with a 72-inch stainless steel probe and a range of 0°F to 200°F manufactured by REOTMP. When not in use, the thermometer is placed in a PVC case to prevent damage and stored at the facility office.

The temperature will be taken at three points along the windrow length. The longest windrows will be approximately 200 feet. The temperatures will be taken at approximately 50 from either end and in the middle of the windrow. The depth of each point will be approximately five feet. The three-windrow temperatures will be averaged to determine the temperature of the windrow. All three temperatures must be above 131 degrees to count toward the 131 degree requirement for three consecutive days.

The temperature of the composting piles will be monitored and recorded at least three days per week until the minimum time temperature standard of 131 degrees for three consecutive days has been met. After that time, temperatures will be monitored as necessary to determine when to turn windrows and when the process is complete. At the start of composting, organisms that are active in medium heat ranges (mesophilic organisms) begin breaking up materials; and as their activity increases, the temperature of the piles begins to rise. Above 110°F, the thermophilic organisms, or those adapted to living in high temperature ranges, become active and the temperature of the windrow increases even more. As the composting process nears completion, the temperature will drop gradually.

The internal temperature of the windrows should be kept in the temperature range of 110°F to 160°F until breakdown is nearly complete. Temperatures over 135°F will assure that fly eggs and larvae, as well as any parasitic organisms, are killed. A minimum temperature of 131°F will be maintained for at least three days in accordance with state operational requirements. Monitoring of the windrow temperatures will be conducted as required to verify that the regulatory requirements are met. The procedures for addressing windrows which do not meet minimum temperature requirements are provided under paragraph 2.8 – Special Conditions of this section. A premature drop in temperature often indicates need for aeration and/or moisture.

Of all parameters, temperature has the most dramatic and consistent impact on microbial activity. The greatest microbial activity occurs from 95°F to 120°F. By turning the piles as soon as the center reaches a temperature of 140°F, a high rate of microbial activity is assured throughout the pile in that the center represents the hottest part of the

windrow with temperature decreases occurring towards the outer edge of the windrow.

2.6 Moisture Content Monitoring

Ideally, the compost moisture content should be 40 percent to 65 percent by wet weight. Significantly, lower moisture content will cause the organisms responsible for decomposition to die. Higher moisture content will prevent oxygen from reaching the organisms. Decreasing moisture content is an indicator of progress in the composting process.

The compost will be visually observed and manually handled to determine the extent of moisture content. Moisture content is monitored during the initial formation of the windrow and following periods of excessive rainfall. This allows for the proper moisture content to be reached at the beginning of the composting process and maintained through the process. When excessive moisture is noted, corrective action (windrow turning) will be initiated.

2.7 Curing and Drying

As the compost approaches stabilization (two or three months), the inner pile temperature will gradually decrease to a range of 95°F to 105°F and will not rise when turned. At this point, the compost is ready for finishing. To improve quality and appearance (marketability) of the end product, it may be passed through a screen to remove oversized particles and stockpiled to cure. The oversized material can be circulated through the composting process by mixing it with material loaded into the grinder or disposed of if it contains significant quantities of contaminants (plastic, glass, metal, etc.).

To be marketable, the final compost should generally have 50 percent to 60 percent total solids (40 percent to 50 percent moisture content) and a pH of 6.0 to 8.0. Moisture reduction can be accomplished through additional turning to aerate any overly moist material. At this time, amendments can be added as necessary to market an optimum product.

2.8 Special Conditions

This section describes the precautions and actions for potential problems which can occur during the composting process including:

- High moisture content.
- Low moisture content.
- Low heat generation.

- Cold weather operation.
- Control of noise, vector, airborne particulates and odor.

High Moisture Content

High moisture content is due to periods of heavy rainfall, very wet incoming material or by adding too much water when trying to raise the moisture content. Methods for mitigating high moisture content include:

- Aerating the pile more frequently to expose more of the material to the air.
- Adding dry biodegradable amendments.

Low Moisture Content

Low moisture content is corrected by adding water to the compost windrow. Water should be added to the compost windrow just before windrow turning operations.

The quantity (Q) of water needed per foot of windrow length is calculated using the following equations:

$Cy = (0.5 \times H \times W)/27$
$Q = Cy \times G$

Where:

H	=	height of windrow in feet
W	=	width at base of windrow in feet
Cy	=	cubic yards of compost/foot in windrow length
G	=	gallons of water required/cubic yard compost
Q	=	gallons of water needed per foot of windrow length

The gallons of water required will be calculated from the Moisture Content monitoring in Section 2.6. Water added to the compost windrows will be derived from storm water collection. This water will be contained in a collection basin and transferred to a water truck (or wagon) and used for process moisture control. A hose will be attached to the truck, and the flow throttled to a controllable level. The flow rate is measured by timing how long it takes to fill a one (1) gallon bucket (in seconds) and multiplied times 60 to obtain the approximate flow rate. Then the same flow rate is maintained to provide the required amount of water to the windrow.

Low Heat Generation

Low heat generation represents low biological activity or pile failure. The shortest period of time composting windrows can approach stabilization in 21 days. With high carbon content material, the process will take substantially longer (90-150 days). If the temperature of the compost pile drops prematurely (in less than 30 days) or never rises above 100°F to 130°F, it indicates low biological activity and possibly failure of the compost. In this situation, the following procedure will be followed:

1. Based on temperature monitoring data, isolate the affected portion of the windrow.
2. Investigate this section for contaminants, such as oil or chemicals. If contaminants are identified, remove the entire section of the windrow and dispose of it.
3. If no contaminants are found, check the moisture content, turn windrow and dampen if necessary.
4. If, after five days, the temperature has not risen at least 5°F, mix the affected portion of the windrow with raw material high in nitrogen (grass clippings, manure, fertilizer) and again attempt to initiate composting.
5. If this effort does not result in satisfactory performance, then the entire affected portion of the windrow has failed and should be disposed of.

Actions will be taken to minimize impacts to the surrounding area due to the facility operation. All equipment operated at the site will have mufflers to reduce noise during operation. Raw material delivered to the site will be incorporated into the windrows as soon as possible. This action, along with the turning of the windrows, should prevent vector and odor problems. Airborne particulates will be kept to a minimum through proper moisture control at the site and not turning during periods of high winds.

Odors are generally the most common problem at a composting facility. Odors can be generated primarily from regions of the windrow becoming anaerobic and from areas where the C:N ratio is too low. Frequent windrow turning to aerate the pile reduces the risk of odor generation from anaerobic conditions. Blending the proper ratios of wastes to place in windrows will assure proper C:N ratio.

Odors are typically strongest during the windrow turning. Odors can be minimized by timing the windrow turning to periods of wet weather and low winds (early morning hours). Windrow turning operations will not be performed when the wind blows from the west. This will minimize odors in the east, which are the closest receptors. If moisture is needed, water can be sprayed on the pile while turning it to help suppress odors.

2.9 Quality Control

The incoming material will be inspected as each load is received to prevent contamination.

2.10 Marketing Plan

The composted material will be marketed and sold to local home owners, landscapers, garden centers, sod farmers, or mulch supply companies.

2.11 Environmental Assessment Impact

The potential environmental impact issues are water quality. The addition of water to the composting windrows is required for efficient composting. A water truck and/or sprinklers will apply water. Zero impact to groundwater and/or surface water quality is expected.

3.0 MAINTENANCE

3.1 Site Maintenance Procedure

General upkeep of the composting facility includes maintaining roads, windrow pads, receiving and storage area, site drainage, electrical, water, sewer, and other facilities. The City is also responsible for collecting litter and stray debris daily on the site.

Weekly maintenance inspections of the facility site include paved areas, facility structures, storm water diversion ditches, berms, and sediment basins will be made to assure proper operation of the facility. Equipment on the site shall be inspected and maintained in accordance with the manufacturers recommendations. In addition, a visual inspection of the site will be performed to evaluate general upkeep.

To minimize odors, the processing receiving area will be swept as necessary to maintain a clean surface. This cleaning shall be performed at least monthly and as necessary.

Each windrow composting area shall be cleaned after completion of a composting operation in that area.

3.2 Safety and Personnel Training

The purpose of this plan is to provide a framework to protect personnel and property under various circumstances. Open burning of solid waste is prohibited.

Personnel Training – The most important element of a safety and contingency plan is to ensure that personnel are properly trained. To this end, City personnel that are involved in the operation or that inspect the operation are required to have training in the following areas:

- Familiarity with this plan.
- Yard waste screening acceptance (this includes how to deal with unacceptable material).
- Safety and standard operating procedures from knowledgeable experienced personnel, including: equipment suppliers, engineers, technicians, and experienced employees.
- Fire identification, protection, and emergency response procedures.
- Environmental regulations.
- Spill response.
- Hazardous Communications.

Periodic testing and refresher training will also be utilized to ensure training retention.

3.3 Contingency Plan:

Emergency contact information will be posted inside the building at the site. Dialing 911 will provide off-site emergency response.

Fire Protection – Routine fire prevention measures will be employed in and around the site, including the buildings and equipment. These measures will include maintaining cleanliness and proper storage of flammable and oily rags. Portable fire extinguishing equipment will be available in the attendant booth and in the vicinity of all heavy equipment to allow for rapid response in the event of a fire. All fire prevention equipment shall be inspected to make sure it is in good working order.

Emergency Response – Should an accident occur, the Facility Operator will notify authorities and summon assistance as necessary. Examples of situations where emergency response is necessary include fire and personnel injury. The necessary emergency response directory will be posted in the on-site attendant's booth.

Severe Storms/Natural Disasters – Severe storms or climatic events may include high intensity rainfall, extreme winds, snow, freezing weather, electrical storms, or earthquakes. Such natural events cannot be prevented. During such events, operations would cease and personnel would take shelter. Given the geographical location of the Greensboro facility, extreme climatological conditions are not extensive in duration or frequency. During times of high winds, heavy rain, or snow, operations

are curtailed or stopped until the weather conditions have improved. Freezing weather conditions are generally limited to overnight and have little to no impact on the composting process. Any snow or ice build-up on the access roads at the facility is removed prior to beginning operations.

After any severe storm or natural disaster, all equipment and facilities would be inspected for damage. Any damage will be repaired immediately. If the damage prevents proper operation of a system, that system would not be restarted until after repairs are made.

Medical and Personnel Emergency – Medical or personnel injury could occur from accidents, possibly involving heavy equipment or other motor vehicles, or due to a health condition of site personnel. In any event, basic first aid will be given on site and an ambulance will be called immediately. Immediate medial care will be provided at a community hospital. If the emergency is the result of an accident, it may be necessary to temporarily close the site to all but emergency vehicles until safe operation of the facility can resume.

3.4 Storm Water Management

During the operation of the composting facility, storm water collected from the composting areas drains into collection basins located on site. Settling of solids occur in the basin with the water recirculated, as needed, to the windrows for increasing moisture content. No direct discharge to a surface water will result from this operation.

The storm water collection system is part of the overall erosion control plan implemented and maintained by the City of Greensboro landfill staff. Any problems or corrective actions requiring corrective action will be addressed by landfill personnel.

3.5 Equipment Maintenance and Operating Reliability

The City of Greensboro will maintain the following equipment:

- One grinder,
- Two front end loaders,
- One dump truck,
- One screener, and
- One windrow turner (optional).

Equipment maintenance includes preventative maintenance in accordance with manufacturer's guidelines and daily inspection. The manufacturer's guidelines are provided in the equipment's operation and maintenance manuals which will be maintained on site at the maintenance office. Daily inspection includes the following:

- Fuel level.
- Oil level.
- Battery.
- Tires (or tracks).
- Hydraulic system.
- Grease/lubricants.
- Lights/alarms.

In addition, operating personnel are trained to be alert for unusual noises and other sensory indications of impending problems. Such indications are checked out immediately upon detection to help prevent more serious equipment failures. The City of Greensboro operates a maintenance shop on the White Street Landfill premises.

If the windrow turner is down for a significant period of time and the front-end loaders are down, the City can relocate a loader or rent a loader for the time period required. If the grinder is down for a significant period of time, a subcontractor can be hired to perform the work.

PROCESS FLOW DIAG

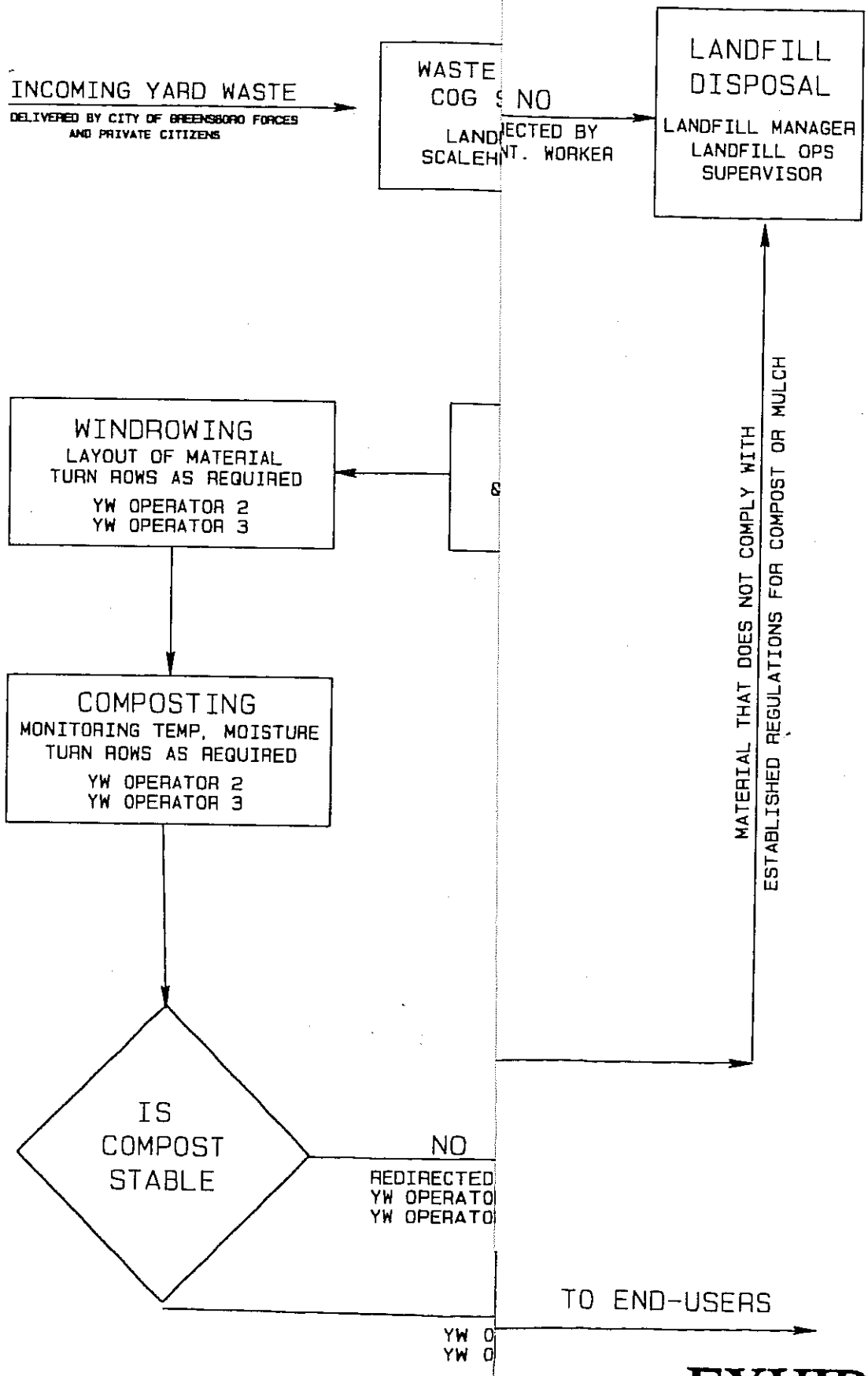


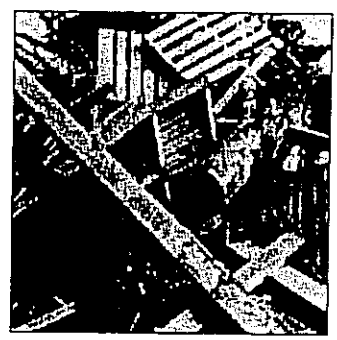
EXHIBIT #7

Appendix D

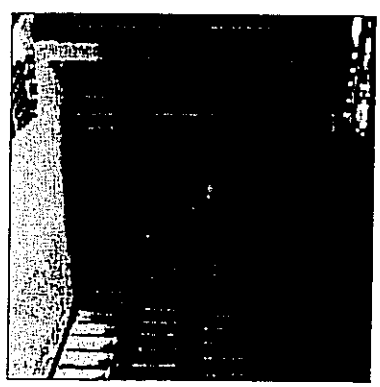
Equipment Specifications

The HC 5400 Portable Heavy Duty Waste Recycler. When you can't choose between high-capacity and economy!

The Peterson Pacific HC 5400 Recycler is a mid-sized grinder that handles high-volume applications. This design offers a safe and productive alternative to conventional grinders. **The HC 5400 features:** *✔Reverse rotation rotor ✔Impact processing ✔Non-crushable material release system ✔Easy access to rotor and grates ✔Variable feed speed ✔Wide variety of grate sizes and configurations available ✔Load sensitive feed control ✔Low operating cost per output volume.*



The HC 5400 easily handles demolition debris, pallets, green waste, building debris, even logs.



The highly efficient hammer mill is continuously fed by a chain conveyor.

The HC 5400 is the ideal processor of waste material. Easy to feed and operate, contractors find the combination of portability and high production hard to beat. Operating cost per ton of output will convince you that the HC 5400 Portable Heavy Duty Waste Recycler transforms recycling problems into solutions!

When you want the best, there's really only one choice...

HC 5400 Portable Heavy Duty Waste Recycler

Peterson Pacific Corp.

Leading the way...with waste recycling

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HC5400 Portable Heavy Duty Waste Recycler

SPECIFICATIONS

Engine/Drive System

Caterpillar® Model 3408E, 575 hp engine, *or*
Caterpillar® Model 3412E, 860 hp engine
Fuel tank capacity: 200 U.S. gallons (757 liters), *575 hp*
276 U.S. gallons (1,045 liters), *860 hp*
Hydraulic drive auto-purge radiator fan
Heavy-duty straddle bearing clutch

Grinder Assembly

Rotor diameter: 41½ in. (105.4 cm)
Rotor width: 63⅛ in. (160.3 cm)
28 fixed hammers, with two-sided replaceable cutting bits

Feed System

Hopper loading height: 9 ft. 3¼ in. (2.83 m)
Feed throat: 60 in. (152.4 cm) wide x 40 in. (101.6 cm) high
Hydraulically driven, variable speed drag chain feed conveyor, 60 in. (1.52 m) wide
Heavy-duty compression roller, automatically adjusts to material height
Water spray system

Safety Mechanisms

Two emergency shutdown buttons
High-heat automatic engine shutdown
Low oil pressure automatic engine shutdown
Single shear pin breakaway anvil system with automatic shutdown

Hydraulic System

Tank capacity: 150 U.S. gallons (568 liters)
Vane and variable displacement pumps
Filter system: Six micron return filter plus ten micron breather

Output Capacity*

575 hp engine:
Green waste: up to 300 cubic yards *or* 95 tons (229 cubic meters *or* 86 metric tons) per hour
Construction/demolition debris: up to 325 cubic yards *or* 60 tons (248 cubic meters *or* 54 metric tons) per hour
860 hp engine:
Green waste: up to 350 cubic yards *or* 97 tons (268 cubic meters *or* 88 metric tons) per hour
Construction/demolition debris: up to 500 cubic yards *or* 75 tons (382 cubic meters *or* 68 metric tons) per hour
* *actual output may vary due to moisture content, material density, material size, support equipment, and grate size.*

Trailer/Frame

Machine weight: approx. 69,000 lbs. (31,320 kg), *575 hp.* approx. 74,750 lbs. (33,930 kg), *860 hp*
Overall length: 41 ft. 8 in. (12.7 meters)
Width, North America: 10 ft. (3.0 meters)
Travel height, North America: 13 ft. 1½ in. (4.0 meters)
Hopper dimensions: 5 ft. wide x 15 ft. 4 in. long (1.52 m x 4.68 m)

Conveyors

Discharge height: 14 ft. 6 in. (4.42 m)
Conveyor width:
Primary conveyor: 57½ in. (146.0 cm)
Secondary conveyor: 36 in. (91.4 cm)

Options

Radio remote control
Auxiliary air compressor
Magnetic head pulley
Wide variety of grate sizes and configurations available

Specifications subject to change without notice

Find out more about the entire Peterson Pacific Corp. product line at:

Peterson Pacific Corp.
Leading the way...with waste recycling

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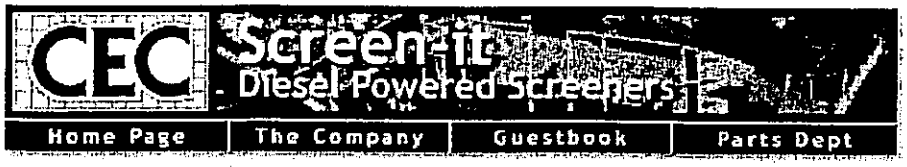
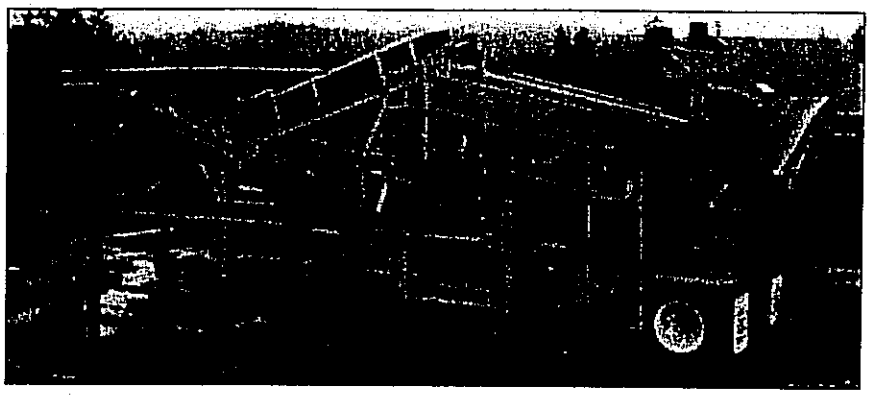


Screen It 4'x10'



The CEC 4' x 10' Screen-It is a very mobile screener, and has the same 5/8" screen stroke of it's Big Brothers (5' x 12' & 6' x 16'). Hydraulic, 15-minute setup; hydraulic-folding, high discharge conveyors; open throat feeder; and optional hydraulic-dump grizzly. Priced with conventional screens. Gives you CEC production.

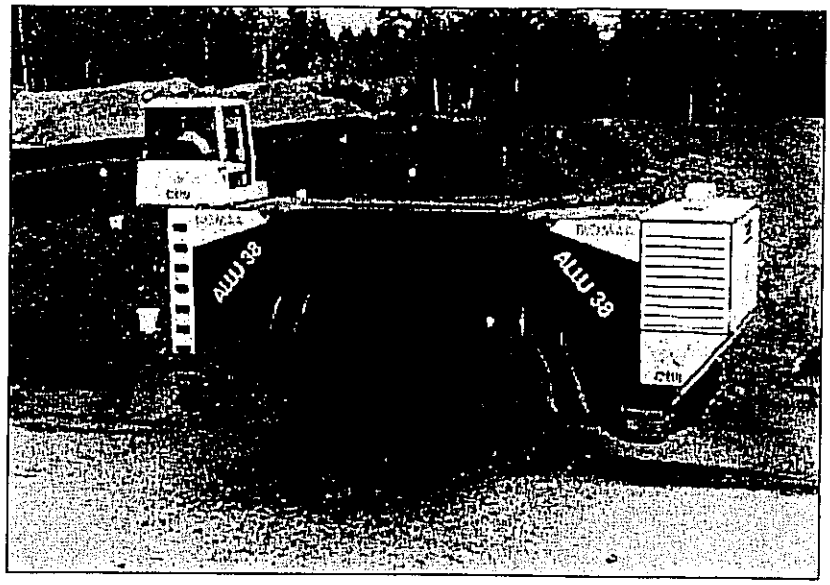
Click here to ask for further information!

ALLU AS 38

ALLU AS 38 Windrow Turner is designed for aeration, turning and mixing of compost windrows. It can be also used for processing of contaminated soils and mass stabilization.

ALLU AS 38 is a separate machine which can be used without any outside equipments or source of energy. The machine is operated by a diesel engine.

Picture of ALLU AS 38 turning sludge compost.



The turner consists of a steel frame onto which the mixing drum is attached. The mixing drum is 6.33 metres long and 2.2 metres in diameter. The drum can be shifted 110 mm vertically. Processing of contaminated soils on several locations has proved the effectiveness of the AS 38 frame and drum structure.

Robust frame and drum structure of ALLU AS 38.

Driving force is produced by hydraulic motors and gears installed inside the

tracks. Their rotation direction and driving speed is steplessly controllable with two joysticks fitted inside the cabin. Both tracks can be individually controlled which ensures small turning radius and good controllability.

If the speed of rotation of the drum decreases under the adjusted limit the driving speed is automatically reduced in order to remove the overload. Then the overload is removed the driving speed returns automatically to the original value if the joysticks have not been moved.

The user operates the machine from a fully equipped safety cabin. The cabin is equipped with heat and sound insulation, a heater, an air conditioner, a radio, a dust separation filter, an adjustable seat, a windscreen wiper etc. The cabin can be shifted vertically about 1.7 metres in order to ensure a better view to a windrow (up) and to ease up transportation (down).

The turner is delivered with a remote control unit which ensures easier and safer drive to and from a transportation platform.

Technical Specifications

WINDROW	Triangle - max width 8 m * - max volume 12 m^3/m * * = depending on material Material max weight 1800 kg/m^3.
DRIVING ENGINE	Mercedes-Benz OM 502 LA - 330 kW / 442 hp / 1800 1/min - intercooled turbo diesel - Euromot / EPA 2 certification - heavy duty Mesabi radiator
CABIN	A fully equipped safety cabin including - heat isolation - sound isolation - air conditioning - heating - dust separation - lights - complete operation control - windscreen wiper - seat with adjustments - radio Can be vertically shifted down about 1700 mm for transportation.
POWER TRANSMISSION	PTO-clutch, fluid coupling, power belts, gearbox.
MIXING DRUM	Diameter 2.2 m. Length 6.3 m. Ground clearance adjustable up to 200 mm.
PLOWS	Working width 8 m.

	Scrapers can be shifted hydraulically. Can be turned for transportation.
TRACKS	A robust 0.5 m wide and 2.4 m long pair of steel tracks.
WORKING SPEED	50 - 500 m/h depending on the material.
MOVING SPEED	About 2 km/h.
TOTAL WEIGHT	About 22 tons.
DIMENSIONS	Working condition - width 9.5 m - length 4.3 m - height 4.9 m Transportation condition - width 10.2 m - length 2.6 m - height 3.45 m Min transportation platform area 2.6 x 8.3 m.
TEMPERATURE	Max continuous working temperature +45°C.

Street address: Ahertajantie 1, 15871 Hollola, FINLAND Postal address: P.O. Box 62, 15880 Hollola, FINLAND
Phone: +358 3 882 140 Fax: +358 3 882 1440 Email: info@allu.net

Appendix E

NPDES Storm Water Permit

STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH, AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

GENERAL PERMIT NO. NCG120000

TO DISCHARGE STORMWATER UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of North Carolina General Statute 143-215.1, other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission and the Federal Water Pollution Control Act, as amended, this permit is hereby issued to all owners or operators, hereafter permittees, which are covered by this permit as evidenced by receipt of a Certificate of Coverage by the Environmental Management Commission to allow the discharge of stormwater to the surface waters of North Carolina or separate storm sewer systems conveying stormwater to surface waters in accordance with the terms and conditions set forth herein.

Coverage under this general permit is applicable to all owners or operators of stormwater point source discharges associated with activities classified as Landfills that are permitted by the North Carolina Division of Solid Waste Management under the provisions and requirements of North Carolina General Statute 130A - 294.

The following are specifically excluded from coverage under this General Permit: Stormwater discharges from open dumps, hazardous waste disposal sites, or discharges of wastes (including leachate as defined in 15A NCAC 13B.0101(11)) to the waters of the state.

The General Permit shall become effective on September 1, 2002.

The General Permit shall expire at midnight on August 31, 2007.

Signed this day July 19, 2002.

Alan W. Klimek, P.E., Director
Division of Water Quality
By the Authority of the Environmental Management Commission

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PART I INTRODUCTION

SECTION A: GENERAL PERMIT COVERAGE

All persons desiring to be covered by this General Permit must register with the Division of Water Quality by the filing of a Notice of Intent (NOI) and applicable fees. The NOI shall be submitted and a certificate of coverage issued prior to any discharge of stormwater associated with industrial activity that has a point source discharge to the surface waters of the state.

Any owner or operator not wishing to be covered or limited by this General Permit may make application for an individual NPDES permit in accordance with NPDES procedures in 15A NCAC 2H .0100, stating the reasons supporting the request. Any application for an individual permit should be made at least 180 days prior to commencement of discharge.

This General Permit does not cover activities or discharges covered by an individual NPDES permit until the individual permit has expired or has been revoked. Any person conducting an activity covered by an individual permit but which could be covered by this General Permit may request that the individual permit be revoked and coverage under this General Permit be provided.

During the period beginning on the effective date of the permit and lasting until expiration, the Permittee is authorized to discharge stormwater associated with industrial activity. Such discharges shall be controlled, limited and monitored as specified in this permit.

SECTION B: PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to discharge stormwater to the surface waters of North Carolina or separate storm sewer system which has been adequately treated and managed in accordance with the terms and conditions of this General Permit. All discharges shall be in accordance with the conditions of this permit.

Any other point source discharge to surface waters of the state is prohibited unless it is an allowable non-stormwater discharge or is covered by another permit, authorization or approval.

This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law, rule, standard, ordinance, order, judgment, or decree.

SECTION C: PERMIT RENEWAL

Dischargers covered by general permits need not submit new Notices of Intent or renewal requests unless so directed by the Division. If the Division chooses not to renew a general permit, all facilities covered under that general permit shall be notified to submit applications for individual permits.

PART II MONITORING, CONTROLS, AND LIMITATIONS FOR PERMITTED DISCHARGES

SECTION A: FINAL LIMITATIONS AND CONTROLS FOR STORMWATER DISCHARGES

During the period beginning on the effective date of the permit and lasting until expiration the Permittee is authorized to discharge stormwater. Such discharges shall be controlled, limited and monitored as specified below:

1. Prior to commencement of land disturbing activities, the permittee shall submit for approval of a Sedimentation and Erosion Control Plan (plan) to the Department of Environment, Health, and Natural Resources, Division of Land Resources, Land Quality Section, (or an approved local program) pursuant to the requirements of NC G.S. 113A-54.1 and in conformity with the rules adopted by the Sedimentation and Erosion Control Commission.

2. The Permittee shall implement the plan, which has been approved by the approval authority. The approved plan is considered a requirement or condition of this general permit. Deviation from the approved plan, or approved amendment to the plan, shall constitute a violation of the terms and conditions of this general permit. A signed copy of the approved plan shall be maintained on the site at all times.

3. Prior to constructing or operating a landfill the permittee shall obtain a permit for a sanitary landfill from the N.C. Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, pursuant to the requirements of NC G.S. 130A - 294 and in conformity with the rules adopted in 15A North Carolina Administrative Code, Subchapter 13B Section .0500 or Section .1600. The landfill permit is considered a requirement or condition of this general permit. Deviation from the landfill permit, or approved amendment or revision of the landfill permit, shall constitute a violation of the terms and conditions of this general permit. A signed copy of the landfill permit shall be maintained on the site at all times.

4. Equipment utilized during the land disturbing or landfill operational activities on a site shall be operated and maintained in such a manner as to prevent potential or actual pollution of the surface or ground waters of the state. Fuels, lubricants, coolants, and hydraulic fluids, or any other petroleum products, shall not be discharged onto the ground or into surface waters. Spent fluids shall be disposed of in a manner so as not to enter the waters, surface or ground, of the state and in accordance with applicable state and federal disposal regulations. Any spilled fluids shall be cleaned up to the extent practicable and disposed of in a manner so as not to allow their entry into the waters, surface or ground, of the state.

SECTION B: ANALYTICAL MONITORING REQUIREMENTS

During the period beginning on the effective date of the permit and lasting until expiration, the Permittee is authorized to discharge stormwater. Analytical monitoring of stormwater discharges shall be performed as specified below in Table 1.

For each parameter, the arithmetic mean of all analytical sampling results collected during the term of the permit shall be calculated for each individual outfall. The computed arithmetic mean is then compared to the cut-off concentrations listed below in Table 2. If the arithmetic mean is less than the specified cut-off concentration for a given parameter, then the facility is not required to continue annual analytical monitoring for that parameter (at that outfall) during the remaining term of the permit unless a significant change in facility operations or configuration occurs. If a cut-off concentration results in discontinued analytical monitoring at an individual discharge outfall, the permittee is required to maintain facility operations that ensure the continuation of stormwater runoff quality.

The permittee must perform analytical sampling during the first and last year of the permit term regardless of cut-off concentration conditions. Analytical results from sampling during the final year of the permit term must be submitted with the permit renewal application. All analytical monitoring shall be performed during a representative storm event.

Table 1. Analytical Monitoring Requirements

Discharge Characteristics	Units	Measurement Frequency[1]	Sample Type[2]	Sample Location[3]
Chemical Oxygen Demand	mg/l	annually	Grab	SDO
Fecal Coliform	# per 100 ml	annually	Grab	SDO
Total Suspended Solids	mg/l	annually	Grab	SDO
Total Rainfall[4]	inches	annually	-	-
Event Duration[4]	minutes	annually	-	-
Total Flow[4]	MG	annually	-	SDO

Footnotes:

1 Measurement Frequency: Once per year during a representative storm event. A year is defined as the 12 month period beginning on the month and day of issuance of the Certificate of Coverage.

2 If the stormwater runoff is controlled by a stormwater detention pond a grab sample of the discharge from the pond shall be collected within the first 30 minutes of discharge. If the detention pond discharges only in response to a storm event exceeding a ten year design storm, then no analytical monitoring is required and only qualitative monitoring shall be performed.

3 Sample Location: Samples shall be collected at each stormwater discharge outfall (SDO) unless representative outfall status has been granted.

4 For each sampled representative storm event the total precipitation, storm duration, and total flow must be monitored. Total flow shall be either; (a) measured continuously, (b) calculated based on the amount of area draining to the outfall, the amount of built-upon (impervious) area, and the total amount of rainfall, or (c) estimated by the measurement of flow at 20 minute intervals during the rainfall event.

Table 2. Cut-off Concentrations for Analytical Monitoring Requirements

Discharge Characteristics	Cut-off Concentration
Chemical Oxygen Demand	120 mg/l
Fecal Coliform	1000 colonies per 100 ml
Total Suspended Solids	100 mg/l

SECTION C: QUALITATIVE MONITORING REQUIREMENTS

Qualitative monitoring requires a visual inspection of each stormwater outfall regardless of representative outfall status and shall be performed as specified below in Table 3 when conducted during a stormwater discharge. If no stormwater discharge is occurring during the time of the weekly inspection a check to ensure that all sedimentation and erosion controls are being properly implemented will be performed. Qualitative monitoring is for the purpose of evaluating the effectiveness of sedimentation and erosion controls, and assessing new sources of stormwater pollution. No analytical tests are required.

Qualitative monitoring shall be conducted at least once every seven calendar days, and within 24 hours after any storm event of greater than 0.5 inches of rain per 24 hour period. During stormy periods, or whenever runoff occurs daily, all sedimentation and erosion control facilities shall be inspected daily and immediately before closing operations for the weekend or other holiday.

The operator shall keep a record of these qualitative monitoring inspections on-site. Uncontrolled releases of mud or muddy water or visible sedimentation found off site shall be recorded with a brief explanation as to the measures taken to prevent future releases as well as any measures taken to clean up the sediment that has left the site. This record shall be made available to DWQ or authorized agent upon request.

Table 3. Qualitative Monitoring Requirements

Discharge Characteristics	Frequency	Monitoring Location[1]
Color	every 7 days &/or after a 0.5 inch rain event	SDO
Odor	every 7 days &/or after a 0.5 inch rain event	SDO
Clarity	every 7 days &/or after a 0.5 inch rain event	SDO
Floating Solids	every 7 days &/or after a 0.5 inch rain event	SDO
Suspended Solids	every 7 days &/or after a 0.5 inch rain event	SDO
Foam	every 7 days &/or after a 0.5 inch rain event	SDO
Oil Sheen	every 7 days &/or after a 0.5 inch rain event	SDO
Other obvious indicators of stormwater pollution	every 7 days &/or after a 0.5 inch rain event	SDO

Footnotes:

1 Monitoring Location. Qualitative monitoring shall be performed at each stormwater discharge outfall (SDO) regardless of representative outfall status.

SECTION D: ON-SITE VEHICLE MAINTENANCE MONITORING REQUIREMENTS

Facilities which have any vehicle maintenance activity occurring on-site which uses more than 55 gallons of new motor oil per month when averaged over the calendar year shall perform analytical monitoring as specified below in Table 4. This monitoring shall be performed at all outfalls which discharge stormwater runoff from the vehicle maintenance areas.

For each parameter, the arithmetic mean of all analytical sampling results collected during the term of the permit shall be calculated for each individual outfall. The computed arithmetic mean is then compared to the cut-off concentrations listed below in Table 5. If the arithmetic mean is less than the specified cut-off concentration for a given parameter, then the facility is not required to continue annual analytical monitoring for that parameter (at that outfall) during the remaining term of the permit unless a significant change in facility operations or configuration occurs. If a cut-off concentration results in discontinued analytical monitoring at an individual discharge outfall, the permittee is required to maintain facility operations that ensure the continuation of stormwater runoff quality.

The permittee must perform analytical sampling during the first and last year of the permit term regardless of cut-off concentration conditions. Analytical results from sampling during the final year of the permit term must be submitted with the permit renewal application. All analytical monitoring shall be performed during a representative storm event.

Table 4. Analytical Monitoring Requirements for On-Site Vehicle Maintenance

Discharge Characteristics	Units	Measurement Frequency	Sample Type[1]	Sample Location[2]
pH	standard	annually	Grab	SDO
Oil and Grease	mg/l	annually	Grab	SDO
New Motor Oil Usage	gallons/month	annually	Estimate	SDO
Total Flow[3]	MG	annually	Grab	SDO
Total Suspended Solids	mg/l	annually	Grab	SDO

Footnotes

1 If the stormwater runoff is controlled by a stormwater detention pond a grab sample of the discharge from the pond shall be collected within the first 30 minutes of discharge. If the detention pond discharges only in response to a storm event exceeding a ten year design storm, then no analytical monitoring is required and only qualitative monitoring shall be performed.

2 Sample Location. Samples shall be collected at each stormwater discharge outfall (SDO) that discharges stormwater runoff from area(s) where vehicle maintenance activities occur.

3 Total flow shall be: (a) measured continuously, (b) calculated based on the amount of area draining to the outfall, the amount of built-upon (impervious) area, and the total amount of rainfall, or (c) estimated by the measurement of flow at 20 minute intervals during the rainfall event. Total precipitation and duration of the rainfall event measured shall result from the sampled representative storm event.

Table 5. Cut-off Concentrations for On-Site Vehicle Maintenance Activities

Discharge Characteristics	Cut-off Concentration
pH[1]	within range 6.0 - 9.0
Oil and Grease	30 mg/l
Total Suspended Solids	100 mg/l

Footnotes

1 pH cannot be averaged due to the nature of the logarithmic pH scale. The most recent pH sample result shall be used for cut-off concentration purposes.

PART III STANDARD CONDITIONS FOR NPDES STORMWATER GENERAL PERMITS

SECTION A: COMPLIANCE AND LIABILITY

1. Compliance Schedule

The permittee shall comply with Limitations and Controls specified for stormwater discharges in accordance with the following schedule:

Existing Facilities: The Stormwater Pollution Prevention Plan shall be developed and implemented within 12 months of the effective date of the initial certificate of coverage issued pursuant to this general permit and updated thereafter on an annual basis. Secondary containment, as specified in Part II, Section A, Paragraph 2(b) of this permit, shall be accomplished within 12 months of the effective date of the initial certificate of coverage.

Proposed Facilities: The Stormwater Pollution Prevention Plan shall be developed and implemented prior to the beginning of discharges from the operation of the industrial activity and be updated thereafter on an annual basis. Secondary containment, as specified in Part II, Section A, Paragraph 2(b) of this permit shall be accomplished prior to the beginning of discharges from the operation of the industrial activity.

2. Duty to Comply.

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

(a) The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

(b) The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $27,500 per day for each violation. The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or

imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(c) Under state law, a daily civil penalty of not more than twenty-five thousand dollars ($25,000) per violation may be assessed against any person who violates or fails to act in accordance with the terms, conditions, or requirements of a permit. [Ref: NC General Statutes 143-215.6A].

(d) Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500. Penalties for Class II violations are not to exceed $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500.

3. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this general permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Civil and Criminal Liability

Except as provided in Section C of this permit regarding bypassing of stormwater control facilities, nothing in this general permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties for noncompliance pursuant to NCGS 143-215.3, 143-215.6A, 143-215.6B, 143-215.6C or Section 309 of the Federal Act, 33 USC 1319. Furthermore, the permittee is responsible for consequential damages, such as fish kills, even though the responsibility for effective compliance may be temporarily suspended.

5. Oil and Hazardous Substance Liability

Nothing in this general permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under NCGS 143-215.75 et seq. or Section 311 of the Federal Act, 33 USC 1321.

6. Property Rights

The issuance of this general permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

7. Severability

The provisions of this general permit are severable, and if any provision of this general permit, or the application of any provision of this general permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this general permit, shall not be affected thereby.

8. Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the certificate of coverage issued pursuant to this general permit or to determine compliance with this general permit. The permittee shall also furnish to the Director upon request, copies of records required to be kept by this general permit.

9. Penalties for Tampering

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this general permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more that $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

10. Penalties for Falsification of Reports

The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this general permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

SECTION B: GENERAL CONDITIONS

1. General Permit Expiration

The permittee is not authorized to discharge after the expiration date. In order to receive automatic authorization to discharge beyond the expiration date, the permittee shall submit forms and fees as are required by the agency authorized to issue permits no later than 180 days prior to the expiration date. Any permittee that has not requested renewal at least 180 days prior to expiration, or any permittee that does not have a permit after the expiration and has not requested renewal at least 180 days prior to expiration, will be subjected to enforcement procedures as provided in NCGS §143-2153.6 and 33 USC 1251 et. seq.

2. Transfers

The certificate of coverage issued pursuant to this general permit is not transferable to any person except after notice to and approval by the Director. The Director may require modification or revocation and reissuance of the certificate of coverage to change the name and incorporate such other requirements as may be necessary under the Clean Water Act. **Permittee is required to notify the Division in the event the permitted facility is sold or closed.**

3. When an Individual Permit May be Required

The Director may require any owner/operator authorized to discharge under a certificate of coverage issued pursuant to this general permit to apply for and obtain an individual permit or coverage under an alternative general permit. Any interested person may petition the Director to take action under this paragraph. Cases where an individual permit may be required include, but are not limited to, the following:

a. The discharger is a significant contributor of pollutants;

b Conditions at the permitted site change, altering the constituents and/or characteristics of the discharge such that the discharge no longer qualifies for a general permit;

c. The discharge violates the terms or conditions of this general permit;

d. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;

e. Effluent limitations are promulgated for the point sources covered by this general permit;

f. A water quality management plan containing requirements applicable to such point sources is approved after the issuance of this general permit.

g. The Director determines at his own discretion that an individual permit is required.

4. When an Individual Permit May be Requested

Any permittee operating under this general permit may request to be excluded from the coverage of this general permit by applying for an individual permit. When an individual permit is issued to an owner/operator the applicability of this general permit is automatically terminated on the effective date of the individual permit.

5. Signatory Requirements

All applications, reports, or information submitted to the Director shall be signed and certified.

a. All notices of intent to be covered under this general permit shall be signed as follows:

(1) For a corporation: by a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means: (a) a president, secretary, treasurer or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation, or (b) the manager of one or more manufacturing production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding 25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

b. All reports required by the general permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above;

(2) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or well field, superintendent, a position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The written authorization is submitted to the Director.

c. Any person signing a document under paragraphs a. or b. of this section shall make the following certification:

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations."

6. General Permit Modification, Revocation and Reissuance, or Termination

The issuance of this general permit does not prohibit the Director from reopening and modifying the general permit, revoking and reissuing the general permit, or terminating the general permit as allowed by the laws, rules, and regulations contained in Title 40, Code of Federal Regulations, Parts 122 and 123; Title 15A of the North Carolina Administrative Code, Subchapter 2H .0100; and North Carolina General Statute 143-215.1 et. al.

After public notice and opportunity for a hearing, the general permit may be terminated for cause. The filing of a request for a general permit modification, revocation and reissuance, or termination does not stay any general permit condition. The certificate of coverage shall expire when the general permit is terminated.

7. Certificate of Coverage Actions

The certificate of coverage issued in accordance with this general permit may be modified, revoked and reissued, or terminated for cause. The notification of planned changes or anticipated noncompliance does not stay any general permit condition.

SECTION C: OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this general permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the general permit.

2. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the condition of this general permit.

3. Bypassing of Stormwater Control Facilities

Bypass is prohibited and the Director may take enforcement action against a permittee for bypass unless:

a. Bypass was unavoidable to prevent loss of life, personal injury or severe property damage; and

b. There were no feasible alternatives to the bypass, such as the use of auxiliary control facilities, retention of stormwater or maintenance during normal periods of equipment downtime or dry weather. This condition is not satisfied if adequate backup controls should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

c. The permittee submitted notices as required under Section E of this permit.

If the Director determines that it will meet the three conditions listed above, the Director may approve an anticipated bypass after considering its adverse effects.

SECTION D: MONITORING AND RECORDS

1. Representative Sampling

Samples collected and measurements taken, as required herein, shall be characteristic of the volume and nature of the permitted discharge. Analytical sampling shall be performed during a representative storm event. Samples shall be taken on a day and time that is characteristic of the discharge. All samples shall be taken before the discharge joins or is diluted by any other waste stream, body of water, or substance. Monitoring points as specified in this permit shall not be changed without notification to and approval of the Director.

2. Recording Results

For each measurement, sample, inspection or maintenance activity performed or collected pursuant to the requirements of this general permit, the permittee shall record the following information:

a. The date, exact place, and time of sampling, measurements, inspection or maintenance activity;

b. The individual(s) who performed the sampling, measurements, inspection or maintenance activity;

c. The date(s) analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

3 Flow Measurements

Where required, appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges.

4. Test Procedures

Test procedures for the analysis of pollutants shall conform to the EMC regulations published pursuant to NCGS 143-215.63 et. seq, the Water and Air Quality Reporting Acts, and to regulations published pursuant to Section 304(g), 33 USC 1314, of the Federal Water Pollution Control Act, as Amended, and Regulation 40 CFR 136.

To meet the intent of the monitoring required by this general permit, all test procedures must produce minimum detection and reporting levels and all data generated must be reported down to the minimum detection or lower reporting level of the procedure.

5. Representative Outfall

If a facility has multiple discharge locations with substantially identical stormwater discharges that are required to be sampled, the permittee may petition the Director for representative outfall status. If it is established that the stormwater discharges are substantially identical and the permittee is granted representative outfall status, then sampling requirements may be performed at a reduced number of outfalls.

6. Records Retention

Visual monitoring shall be documented and records maintained at the facility along with the Stormwater Pollution Prevention Plan. Copies of analytical monitoring results shall also be maintained on-site. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this general permit for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

7. Inspection and Entry

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Director), or in the case of a facility which discharges through a municipal separate storm sewer system, an authorized representative of a municipal operator or the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to;

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this general permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this general permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this general permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring general permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

SECTION E: REPORTING REQUIREMENTS

1. Discharge Monitoring Reports

Samples analyzed in accordance with the terms of this permit shall be submitted to the Division on Discharge Monitoring Report forms provided by the Director. Submittals shall be received by the Division no later than 30 days from the date the facility receives the sampling results from the laboratory.

Documentation of the qualitative monitoring associated with the initial analytical monitoring event shall be included with the required analytical monitoring submittal for the first year of the permit coverage.

Analytical results from sampling during the final year of the permit coverage shall be submitted with the permit renewal application.

2. Submitting Reports

Duplicate signed copies of all reports required herein, shall be submitted to the following address:

Central Files
Division of Water Quality
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

3. Availability of Reports

Except for data determined to be confidential under NCGS 143-215.3(a)(2) or Section 308 of the Federal Act, 33 USC 1318, all reports prepared in accordance with the terms shall be available for public inspection at the offices of the Division of Water Quality. As required by the Act, analytical data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NCGS 143-215.6B or in Section 309 of the Federal Act.

4. Non-Stormwater Discharges

If the storm event monitored in accordance with this general permit coincides with a non-stormwater discharge, the permittee shall separately monitor all parameters as required under the non-stormwater discharge permit and provide this information with the stormwater discharge monitoring report.

5. Planned Changes

The permittee shall give notice to the Director as soon as possible of any planned changes at the permitted facility which could significantly alter the nature or quantity of pollutants discharged. This notification requirement includes pollutants which are not specifically listed in the general permit or subject to notification requirements under 40 CFR Part 122.42 (a).

6. Anticipated Noncompliance

The permittee shall give notice to the Director as soon as possible of any planned changes at the permitted facility which may result in noncompliance with the general permit requirements.

7. Bypass

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass; including an evaluation of the anticipated quality and affect of the bypass.

b. Unanticipated bypass. The permittee shall submit notice within 24 hours of becoming aware of an unanticipated bypass.

8. Twenty-four Hour Reporting

The permittee shall report to the central office or the appropriate regional office any noncompliance which may endanger health or the environment. Any information shall be

provided orally within 24 hours from the time the permittee became aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances.

The written submission shall contain a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time compliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

9. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under 24 hour reporting at the time monitoring reports are submitted.

10. Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a Notice of Intent to be covered under this general permit or in any report to the Director, it shall promptly submit such facts or information.

PART IV LIMITATIONS REOPENER

This general permit shall be modified or alternatively, revoked and reissued, to comply with any applicable effluent guideline or water quality standard issued or approved under Sections 302(b) (2) (c), and (d), 304(b) (2) and 307(a) of the Clean Water Act, if the effluent guideline or water quality standard so issued or approved:

a. Contains different conditions or is otherwise more stringent than any effluent limitation in the general permit; or

b. Controls any pollutant not limited in the general permit.

The general permit as modified or reissued under this paragraph shall also contain any other requirements in the Act then applicable.

PART V ADMINISTERING AND COMPLIANCE MONITORING FEE REQUIREMENTS

The permittee must pay the administering and compliance monitoring fee within 30 (thirty) days after being billed by the Division. Failure to pay the fee in timely manner in accordance with 15A NCAC 2H .0105(b)(4) may cause this Division to initiate action to revoke the Certificate of Coverage.

PART VI DEFINITIONS

1. Act

   See Clean Water Act.

2. Arithmetic Mean

   The arithmetic mean of any set of values is the summation of the individual values divided by the number of individual values.

3. Allowable Non-Stormwater Discharges

   This permit regulates stormwater discharges. Non-stormwater discharges which shall be allowed in the stormwater conveyance system are:

   (a) All other discharges that are authorized by a non-stormwater NPDES permit.

(c) Discharges resulting from fire-fighting or fire-fighting training.

4. Best Management Practices (BMPs)

Measures or practices used to reduce the amount of pollution entering surface waters. BMPs may take the form of a process, activity, or physical structure.

5. Bypass

A bypass is the known diversion of stormwater from any portion of a stormwater control facility including the collection system, which is not a designed or established operating mode for the facility.

6. Bulk Storage of Liquid Products

Liquid raw materials, manufactured products, waste materials or by-products with a single above ground storage container having a capacity of greater than 660 gallons or with multiple above ground storage containers located in close proximity to each other having a total combined storage capacity of greater than 1,320 gallons.

7. Certificate of Coverage

The Certificate of Coverage (COC) is the cover sheet which accompanies the general permit upon issuance and lists the facility name, location, receiving stream, river basin, effective date of coverage under the permit and is signed by the Director.

8. Clean Water Act

The Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), as amended, 33 USC 1251, et. seq.

9. Division or DWQ

The Division of Water Quality, Department of Environment and Natural Resources.

10. Director

The Director of the Division of Water Quality, the permit issuing authority.

11. EMC

The North Carolina Environmental Management Commission.

12. Grab Sample

An individual samples collected instantaneously. Grab samples that will be directly analyzed or qualitatively monitored must be taken within the first 30 minutes of discharge.

13. Hazardous Substance

Any substance designated under 40 CFR Part 116 pursuant to Section 311 of the Clean Water Act.

14. Landfill

A disposal facility or part of a disposal facility where waste is placed in or on land and which is not a land treatment facility, a surface impoundment, an injection well, a hazardous waste long-term storage facility or a surface storage facility.

15. Municipal Separate Storm Sewer System

A stormwater collection system within an incorporated area of local self-government such as a city or town.

16. Notice of Intent

The state application form which, when submitted to the Division, officially indicates the facility's notice of intent to seek coverage under a general permit.

17. Overburden

Any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations.

18. Permittee

The owner or operator issued a certificate of coverage pursuant to this general permit.

19. Point Source Discharge of Stormwater

Any discernible, confined and discrete conveyance including, but not specifically limited to, any pipe, ditch, channel, tunnel, conduit, well, or discrete fissure from which stormwater is or may be discharged to waters of the state.

20. Representative Storm Event

A storm event that measures greater than 0.1 inches of rainfall and that is preceded by at least 72 hours in which no storm event measuring greater than 0.1 inches has occurred. A single storm event may contain up to 10 consecutive hours of no precipitation. For example, if it rains for 2 hours without producing any collectable discharge, and then stops, a sample may be collected if a rain producing a discharge begins again within the next 10 hours.

21. Representative Outfall Status

When it is established that the discharge of stormwater runoff from a single outfall is representative of the discharges at multiple outfalls, the DWQ may grant representative outfall status. Representative outfall status allows the permittee to perform analytical monitoring at a reduced number of outfalls.

22. Rinse Water Discharge

The discharge of rinse water from equipment cleaning areas associated with industrial activity. Rinse waters from vehicle and equipment cleaning areas are process wastewaters and do not include washwaters utilizing any type of detergent or cleaning agent.

23. Secondary Containment

Spill containment for the contents of the single largest tank within the containment structure plus sufficient freeboard to allow for the 25-year, 24-hour storm event.

24. Section 313 Water Priority Chemical

A chemical or chemical category which:

a. Is listed in 40 CFR 372.65 pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986, also titled the Emergency Planning and Community Right-to-Know Act of 1986;

b. Is present at or above threshold levels at a facility subject to SARA title III, Section 313 reporting requirements; and

c. That meet at least one of the following criteria:

(1) Is listed in appendix D of 40 CFR part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols) or Table IV (certain toxic pollutants and hazardous substances);

(2) Is listed as a hazardous substance pursuant to section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or

(3) Is a pollutant for which EPA has published acute or chronic water quality criteria.

25. Severe Property Damage

Means substantial physical damage to property, damage to the control facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

26. Significant Materials

Includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

27. Significant Spills

Includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under section 311 of the Clean Water Act (Ref: 40 CFR 110.10 and CFR 117.21) or section 102 of CERCLA (Ref: 40 CFR 302.4).

28. Stormwater Runoff

The flow of water which results from precipitation and which occurs immediately following rainfall or as a result of snowmelt.

29. Stormwater Associated with Industrial Activity

The discharge from any point source which is used for collecting and conveying stormwater and which is directly related to manufacturing, processing or raw material storage areas at an industrial site. Facilities considered to be engaged in "industrial activities" include those activities defined in 40 CFR 122.26(b)(14). The term does not include discharges from facilities or activities excluded from the NPDES program.

30. Stormwater Pollution Prevention Plan

A comprehensive site-specific plan which details measures and practices to reduce stormwater pollution and is based on an evaluation of the pollution potential of the site.

31. Ten Year Design Storm

The maximum 24 hour precipitation event expected to be equaled or exceeded on the average once in ten years. Design storm information can be found in the State of North Carolina Erosion and Sediment Control Planning and Design Manual.

32. Total Flow

The flow corresponding to the time period over which the entire storm event occurs. Total flow shall be either; (a) measured continuously, (b) calculated based on the amount of area draining to the outfall, the amount of built-upon (impervious) area, and the total amount of rainfall, or (c) estimated by the measurement of flow at 20 minute intervals during the rainfall event.

33. Toxic Pollutant

Any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act.

34. Upset

Means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment or control facilities, inadequate treatment or control facilities, lack of preventive maintenance, or careless or improper operation.

35. Vehicle Maintenance Activity

Vehicle rehabilitation, mechanical repairs, painting, fueling, lubrication, vehicle cleaning operations, or airport deicing operations.

36. Visible Sedimentation

Solid particulate matter, both mineral and organic, that has been or is being transported by water, air, gravity, or ice from its site of origin which can be seen with the unaided eye.

37. 25-year, 24 hour storm event

The maximum 24-hour precipitation event expected to be equaled or exceeded, on the average, once in 25 years.

Appendix F

Information Sheet

INFORMATION SHEET
CITY OF GREENSBORO COMPOST

The City of Greensboro compost is a Grade A compost and is a combination of leaves and yard waste from sources within Guilford County. Composting is a natural process that utilizes microorganisms to decompose organic matter. The material can be used as a mulch or as a soil amendment. The compost **cannot** be used as a stand alone fertilizer or a stand alone potting medium. This material should **not** be used in areas prone to flooding or to frozen ground.